

APPLICATION NO. 09/745705

October 19, 2004

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1. (Previously Presented) A process, comprising:

forming a first dielectric layer on a substrate, wherein the first dielectric layer has a dielectric constant;

patterning the first dielectric layer such that a plurality of vertically oriented posts are formed on the substrate, the posts having a top surface;

forming a second dielectric layer over and adjacent to the posts, the second dielectric layer having a top surface and substantially filling up the area adjacent to said posts, wherein the second dielectric layer has a dielectric constant, said dielectric constant of the first layer being higher than said dielectric constant of the second layer;

wherein said plurality of vertically oriented posts are used to provide mechanical reinforcement of the second dielectric layer which makes up the bulk of an inter-layer dielectric material;

polishing the second dielectric layer such that its top surface is substantially even with the top surfaces of the posts; and

after forming the second dielectric layer, forming an inlaid metal interconnection in the second dielectric layer.

2. (Original) The process of Claim 1, wherein the substrate comprises a dielectric material.

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3. (Original) The process of Claim 1, wherein the substrate is a material selected from the group consisting of silicon carbide, silicon nitride, and carbon doped oxides of silicon.
4. (Original) The process of Claim 1, further comprising curing the second dielectric layer.
5. (Original) The process of Claim 1, further comprising aging the second dielectric layer.
6. (Original) The process of Claim 1, further comprising forming dual damascene openings in the second dielectric layer.
7. (Original) The process of Claim 1, wherein forming the first dielectric layer comprises depositing an oxide of silicon.
8. (Original) The process of Claim 7, wherein forming the second dielectric layer comprises chemical vapor deposition of a low-k material.
9. (Original) The process of Claim 7, wherein forming the second dielectric layer comprises spinning on a low-k material.
10. (Canceled)

CLAIMS 11-23 (CANCELLED)

24. (Previously Presented) A process, comprising:

depositing a silicon nitride layer on a substrate;

depositing an insulating layer over the silicon nitride layer, wherein the insulating layer has a dielectric constant;

patterning the insulating layer such that a plurality of structures are formed, the structures each having a top surface;

depositing a porous dielectric material over and adjacent to the structures, the porous dielectric material having a void fraction, wherein the porous dielectric material substantially fills out the area adjacent to said structures and wherein the porous dielectric material has a dielectric constant, said dielectric constant of the insulating layer being higher than the dielectric constant of the porous dielectric material;

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CLAIM 24 (CANCELLED)

26. (Previously Presented) The process of Claim 24, further comprising treating the porous dielectric material such that its void fraction is increased.

Missing - from original.

See Attachment